The training curriculum in hospital infection control

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ABSTRACT

Standardised training curricula for infection control nurses (ICNs) and recognition of the specialty exist in many European countries, but infection control physician (ICP) is not a specialty recognised by the UEMS. To gather information on curricula for ICPs, members of the ESCMID Study Group on Nosocomial Infections received a questionnaire. There is discussion about which 'professions' should be included in an infection control team. Within the 12 countries included, the average full-time equivalents (FTEs) for ICPs and ICNs per 1000 beds were 1.2 and 3.4, respectively. In addition to ICNs and ICPs, an infection control team should also include a data manager, an epidemiologist, secretarial/administrative support, and possibly, surveillance technicians. Overall, the composition of an ideal infection control team was estimated to be 9.3 FTE per 1000 beds. The background of ICPs can be clinical microbiology or infectious diseases. Among the participants, it was predominantly clinical microbiology. The ideal training curriculum for the ICP should include 6 years of postgraduate training. Of these, at least 2 years should be 'clinical training' (e.g., internal medicine) to acquire experience in the management of high-risk patients. Furthermore, training with regard to infection control and hospital epidemiology should be offered as a 'common trunk' for those being trained in clinical microbiology or infectious diseases. Important issues that remain are: implementation/standardisation of training curricula for doctors, recognition of ICP as a separate specialty or sub-specialty of clinical microbiology and/or infectious diseases, validation of on-the-job training facilities in terms of the number of doctors and nurses who can give training and the category of patients/problems present, and mandatory postgraduate education/continuing medical education specific for infection control for doctors and nurses in the field.

Keywords Infection control, infection control nurse, infection control physician, infection control structure, training

Clin Microbiol Infect 2005; 11 (Suppl. 1): 33–35

INTRODUCTION

Recent developments concerning well-known pathogens, such as multidrug resistant *Mycobacterium tuberculosis*, and the impact of new and emerging pathogens upon the long-recognised problems of infection control, have increased the importance of controlling infection in the hospital setting. Classically, infection control is a team effort of medical doctors specialised in the field of infections (clinical microbiologist and infectious disease (ID) specialists) and of infection control nurses (ICNs). While standardised training curricula for ICNs and recognition of the specialty do exist in many European countries, infection control physician (ICP) is not a medical specialty recognised by the UEMS. Furthermore, only a few countries recognise the (sub)speciality of ICP, and training curricula are the exception rather than the rule.

THE INFECTION CONTROL TEAM

To gather information on existing and possible future curricula for ICPs, selected members of the ESCMID Study Group on Nosocomial Infections (ESGNI) received a questionnaire and were subsequently interviewed for further clarification.

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At present, it is still a matter of debate which 'professions' should be included in an infection control team, but according to the results of the questionnaire, several professions mentioned in Table 1 should be considered as essential members of such a team. Since the scope of this presentation is the establishment of a core training curriculum for ICPs—as an independent specialty or integrated within the core training of clinical microbiology and/or infectious diseases—the training of other healthcare workers within the infection control team will not be discussed, although their training should be defined and standardised as well.

Within the 12 countries examined (Austria, Belgium, Switzerland, Germany, Spain, UK, France, Hungary, The Netherlands, Poland, Serbia-Montenegro Montenegro, Turkey), the national standard average full-time equivalents (FTEs) for ICPs and ICNs per 1000 beds were 1.2 and 3.4, respectively. These standards are very close to those recommended by the SCENIC study, based on observation more than a quarter of a century ago. While nearly all national standards included one ICP per 1000 beds, the range for ICNs was much higher (one per 1000 beds to four per 1000 beds). In the participating centres, the average numbers of FTEs for ICPs and ICNs were generally higher than the national standards of the respective countries (selection bias), but all participants nevertheless declared that more FTEs are needed to accomplish their goals, namely 1.8 FTE and 4.2 FTE per 1000 beds for ICPs and ICNs, respectively. In addition to the ICNs and the ICPs, an infection control team should nowadays also include a data manager, an epidemiologist, secretarial/administrative support, and possibly, surveillance technicians. Overall, the average composition of an ideal infection control team was estimated to be 9.3 FTE per 1000 beds (1.8 ICPs, 4.2 ICNs, and 3.3 other co-workers). While it would be favourable to have a new standard expressed in FTE per 1000 beds, the panel felt the need to introduce different 'weights' for different patient populations and hospital settings.

Table 1. Essential members of an infection control team[a]

MD Infection control physician
Nurse/Infection Control Professional
Data manager
Secretarial/administrative support
Surveillance technicians
Epidemiologist

[a]According to the results of the ESGNI questionnaire.

THE TRAINING CURRICULUM FOR THE INFECTION CONTROL PHYSICIAN

Currently, the background of ICPs can be clinical microbiology, ID or both. Among those who answered the questionnaire, it was predominantly clinical microbiology (6 × only microbiology, 4 × both specialties, 2 × only ID).

In Germany, infection control is a medical specialty, known as the 'Facharzt für Hygiene und Umweltmedizin'. The specialty deals with the recognition, registration, analysis and prevention of exogenous factors that have an influence on individual or public health (German URL: http://www.bundesaerztekammer.de/30/Weiterbildung/22MWBO/MWBO2003B/11.html). The 60-month-long on-the-job training within a certified institution must include 12 months of clinical training (on the ward) and 12 months of microbiology or occupational health or public health medicine. The aim of the training is to gain the necessary knowledge, experience and competence with regard to the infection control inside and outside the hospital, including a large proportion of environmental medicine (Table 2).

Taking into account the broad spectrum of activities, this 'medical' specialty seems not to be especially clinically oriented. Furthermore, since Germany recognises the specialty of public health physician, the curriculum of the infection control physicians does not include a strong public health component.

Belgium is currently preparing a training curriculum for ICPs. Unfortunately, the document in Dutch and French, is not yet available, but will be shortly, through the GOSPIZ-GDEPIH web-site (http://www.gospiz-gdepih.be).

CONCLUSION

The ideal training curriculum for the ICP should include a minimum of 6 years of postgraduate training. Of these, at least a minimum of 2 years should be dedicated to internal medicine, particularly to acquire experience in the management of high-risk patients (intensive care unit,

Table 2. Training curriculum for Specialist in Hygene and Environmental Medicine in Germany (''Facharzt für Hygiene und Umweltmedizin'') (A) and a proposed curriculum for the training of an ''infection control physician'' (B)

Element of training/Demonstration of Competence	A	B
Organisation and planning of infection control		
Training in recognition and prevention of nosocomial infections		
Familiarisation with diagnosis, treatment and prevention of nosocomial and community-acquired infections		
Management of Infection control measurements in the hospital		
Training in outbreak management		
Training in disinfection		
Training in sterilisation (extensive knowledge)		
Training in sterilisation (basic knowledge)		
Management of cross speciality infections (diagnosis, treatment and prevention of tuberculosis, hepatitis, etc.)		
Initiation of training programs for infection control		
Research in the field of infection control		
Demonstration of knowledge of surveillance and its analysis		
Familiarisation with IT, the use of databases and statistical packages		
Training in epidemiology and Public Health Medicine		
Training in audit assessment		
Demonstration of communication skills, including basics of behavioural science		
Training in waste management		
Training in travel medicine (basics)		
Training in environmental hygiene (water, soil, air, food)		
Training in environmental medicine and biomonitoring		
Training in environmental toxicology		

haematology, transplantation). This should be part of the common trunk for medical microbiology, ID and public health medicine.

Important issues that remain to be resolved are:

- the implementation and standardisation of training curricula, especially for doctors;
- recognition of the ICP as a separate specialty or sub-specialty of clinical microbiology and/or ID;
- validation of on-the-job training facilities in terms of the number of doctors and nurses able to provide training;
- determination of the category of patients/problems present;
- designation of mandatory postgraduate education/continuing medical education specific to infection control for doctors and nurses in the field.